up largely of thin bedded sandy and shaly limestones, which are brownish gray on fresh surfaces, and which weather to yellowish brown or pink. The beds are from 2 inches to a foot in thickness and generally have a concentration of sandy or shaly material along the bedding planes. Locally thin beds of sandstone may be found and in most exposures moderately thick beds of cherty limestone are also present. The formation is sharply set off from the underlying Oquirrh formation by its lithology and abundant fossil content. The thickness of the formation is approximately 600 feet in the one locality where the overlying Trissic is found. Doctor Girty reports that the fauna is that of the *Spiriferina pulchra* zone of the Permian.

PALEONTOLOGY.—*Contributions to the paleontology of Peru, IV:* "Orthophragmina" (Discocyclina) meroensis *W. Berry, n.sp.*[1] WILLARD BERRY, Ohio State University. (Communicated by JOHN B. REESIDE, JR.)

In a gritty greenish-brown calcareous sandstone at Calita Mero, Department of Piura, Peru, I have found a new species of *"Orthophragmina,"* which is here named *"O." meroensis.* This species, is associated with *O. stewarti* W. Berry, originally described from the Saman conglomerate at Calita Sal, in the same Department and about seventy miles south of Calita Mero. The Saman conglomerate is, so far as I know, the only formation in the Peruvian Tertiaries containing members of the genus *"Orthophragmina"* and I think I am safe, therefore, in saying that it is this formation which is exposed near Calita Mero. The matrix is similar to that at Calita Sal except that it contains few pebbles and many of the grains are subangular. The material was apparently laid down in shallow water, though the size of the particles and almost complete absence of pebbles suggest that the deposits at Calita Mero must have been farther from shore than at Calita Sal, or the land mass from which they were derived had been eroded so that less heavy and bulky material was being carried into the ocean at that point. In general the genus *"Orthophragmina"* lived in shallow, tropical waters which were fairly free from coarser clastic material, and the matrix of the fossils from Calita Mero is in agreement with this fact. From Calita Sal I have described also solitary corals. It would seem that in this general region during Saman conglomerate times little detrital material other than much angular quartz was being deposited.

[1] Received April 1, 1930. Work carried out under a grant from the National Research Council.

The new orbitoid may be described as follows:

"Orthophragmina" (Discocyclina) meroensis W. Berry, n. sp.

Fig. 1

Test large, very thin, slightly undulating, flanged, pronounced umbo; diameter 7.5 mm.; thickness 1.84 mm.; ratio of diameter to thickness about 4:1; fairly large central boss 3 mm. in diameter with a flange about 2.25 mm. in diameter. Surface covered with small polygonal papillae 116.9 microns in diameter at the surface. The surface diameter of the lateral chambers is 97.5 microns.

In equatorial section the nucleoconch is composed of two chambers, the initial chamber is 83 microns in diameter and is half surrounded by the second chamber; diameter of the entire nucleoconch is 501 microns; the walls of the nucleoconch are thin, being only about 16.7 microns thick. The equatorial chambers are typically orthophragminic in shape and are 50 microns in radial diameter and 23.4 microns in tangential diameter near the center; 83.5 microns in radial diameter and 33.4 microns in tangential diameter at the edge of the boss, and 100 microns in radial diameter and 33.4 microns in tangential diameter at the periphery, with walls 15.6 microns thick; these chambers are arranged mostly in circles altho some of the circles are not entire but shrink in radial diameter until they merge into the chamber walls.

In vertical section (Fig. 1) the wall between the equatorial chambers and the lateral chambers is 15.6 microns thick. Vertical diameter of the equatorial chambers at the center of the test 35.1 microns and at the edge of the boss 58.5 microns; the weakness of the flange prevents any measurements at the periphery. Vertical diameter of the lateral chambers 58.5 microns near the central part of the test; thickness of the horizontal walls 7.8 microns. There are 30 lateral chambers on the side of the equatorial chambers near the center of the test.

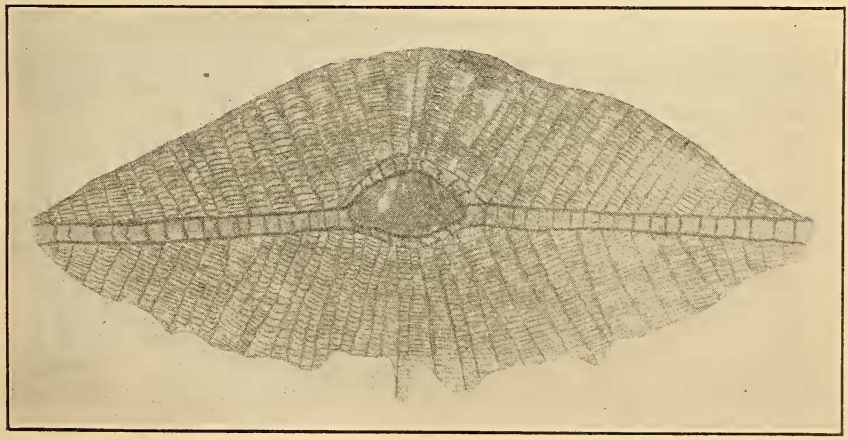

Fig. 1. Vertical section × 23

Occurrence—Calita Mero, Department of Piura, Peru, associated with *"Orthophragmina" (Asterodiscocyclina) stewarti* W. Berry.